

WHAT IS CLAIMED IS:

1. A catheter comprising:
a tubular body having a distal region;
5 a ring member encircling at least a portion of the circumference of the tubular body,
the ring member being slidable along the tubular body; and
at least one elongate member having a proximal end and a distal end, the distal end
of the elongate member being coupled to the distal region of the tubular body and
the proximal end being attached to the ring member.
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2. The catheter of claim 1, wherein the tubular body includes an inner lumen, an outer
surface, and a pair of openings passing between the outer surface and the inner
lumen and the coupling of the elongate member to the distal region of the tubular
body comprises the elongate member passing through the pair of openings.
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3. The catheter of claim 2, wherein the elongate member passes between the ring
member and the pair of openings along the outer surface of the tubular body.
4. The catheter of claim 2, wherein the tubular body includes a second pair of openings
20 passing between the outer surface and the inner lumen and positioned proximal to
the first pair of openings, and
the elongate member passes between the first pair of openings and the second pair
of openings along the outer surface and between the second pair of openings and the
ring member along at least a portion of the inner lumen.
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5. The catheter of claim 4, wherein the tubular body includes a third pair of openings
passing between the outer surface and the inner lumen and positioned proximal of
the second pair of openings, and
the elongate member passes between the third pair of openings and the ring member
30 along the outer surface.
6. The catheter of claim 1, wherein the tubular body includes a loop positioned distal of
the coupling of the elongate member to the distal region of the tubular body.
- 35 7. The catheter of claim 1, wherein the elongate member comprises a single length of a
thread passing between the distal region of the catheter and the ring member.

8. The catheter of claim 1, further comprising a connector piece being attached to a proximal region of the tubular body.
- 5 9. The catheter of claim 1, wherein the distal region of the tubular body defines at least a first stiffness over a substantial portion thereof and a proximal region of the tubular body defines at least a second stiffness over a substantial portion thereof, which second stiffness is less than the first stiffness.
- 10 10. The catheter of claim 9, wherein the tubular body defines at least the first stiffness from a distal end thereof to the proximal region defining the second stiffness.
11. A catheterization kit comprising:
a catheter comprising a connector piece, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region and a proximal region, the connector piece being attached to the proximal region of the tubular body,
15 the elongate member having a proximal end and a distal end, the distal end of the elongate member being coupled to the distal region of the tubular body and the proximal end of the elongate member being attached to the ring member, the ring member being slidable along the tubular body; and
20 an introducer comprising a connector piece and a sheath, the sheath having a longitudinal channel passing between a proximal end and a distal end, and the connector piece having a longitudinal channel and being joined to the proximal end of the sheath;
wherein the ring member abuts the proximal end of the introducer when the catheter
25 is sufficiently positioned within the introducer, thereby causing the elongate member to become stretched, and the catheter connector piece is removably attachable to the introducer connector piece when the catheter is received within the introducer.
- 30 12. The catheterization kit of claim 11, wherein the tubular body includes an inner lumen, an outer surface, and a pair of openings passing between the outer surface and the inner lumen and the coupling of the elongate member to the distal region of the tubular body comprises the elongate member passing through the pair of openings.
- 35 13. The catheterization kit of claim 12, wherein the elongate member passes between the ring member and the pair of openings along the outer surface of the tubular body.

14. The catheterization kit of claim 12, wherein the tubular body includes a second pair of openings passing between the outer surface and the inner lumen and positioned proximal to the first pair of openings, and
5 the elongate member passes between the first pair of openings and the second pair of openings along the outer surface and between the second pair of openings and the ring member along at least a portion of the inner lumen.
15. The catheterization kit of claim 14, wherein the tubular body includes a third pair of openings passing between the outer surface and the inner lumen and positioned
10 proximal of the second pair of openings, and the elongate member passes between the third pair of openings and the ring member along the outer surface.
16. The catheterization kit of claim 11, wherein the tubular body includes a loop
15 positioned distal of the coupling of the elongate member to the distal region of the tubular body.
17. The catheterization kit of claim 11, wherein the elongate member comprises a single
20 length of a thread passing between the distal region of the catheter and the ring member.
18. The catheterization kit of claim 11, wherein the distal region of the tubular body defines at least a first stiffness over a substantial portion thereof and the proximal
25 region of the tubular body defines at least a second stiffness over a substantial portion thereof, which second stiffness is less than the first stiffness.
19. The catheterization kit of claim 18, wherein the tubular body defines at least the first
30 stiffness from a distal end thereof to the proximal region defining the second stiffness.
20. The catheterization kit of claim 11, wherein the introducer has a length that is
approximately the same as a length of the elongate member extending between the attachment of the elongate member to the ring member and the coupling of the
35 elongate member to the distal region of the tubular body.
21. The catheterization kit of claim 20, wherein the length of the elongate member
between the attachment of the elongate member to the ring member and the

coupling of the elongate member to the distal region of the tubular body is between approximately 3 mm and 10 mm longer than the length of the introducer.

- 5 22. The catheterization kit of claim 11, wherein the ring member is securable proximally of the introducer for stretching the elongate member.
23. The catheterization kit of claim 22, wherein the elongate member is securable by a fastening means provided on the proximal end of the introducer.
- 10 24. The catheterization kit of claim 23, wherein the fastening means comprises a clamping device.
25. The catheterization kit of claim 24, wherein the clamping device comprises a slot in which the elongate member is securable in a press fit.
- 15 26. The catheterization kit of claim 11, wherein the elongate member extends from the point where it is coupled to the catheter and along the outer surface of the catheter.
27. The catheterization kit of claim 23, wherein the fastening means comprises a slit in which the elongate member is securable by frictional engagement.
- 20 28. The catheterization kit of claim 11, wherein the elongate member is coupled to the catheter at a finite distance from the distal tip of the catheter.
29. The catheterization kit of claim 11, further comprising a needle having an inner lumen.
- 25 30. The catheterization kit of claim 29, further comprising a guide wire configured to fit within the inner lumen of the needle.
- 30 31. The catheterization kit of claim 30, further comprising a dilator having an inner lumen configured to pass over the guide wire.
32. The catheterization kit of claim 31, wherein the dilator includes a radiopaque section positioned such that it is located at the distal end of the sheath of the introducer
- 35 when the dilator is sufficiently positioned within the introducer.

33. The catheterization kit of claim 11, further comprising a guiding pin configured to fit within the tubular body.
34. A catheterization kit comprising:
5 a catheter comprising a tubular body, at least one elongate member and a stop, the tubular body having a distal region, the elongate member having a length, a proximal end and a distal end, the distal end of the elongate member being mounted to the distal region of the tubular body, the proximal end of the elongate member being attached to the stop and the stop being slidable along the tubular body; and
10 an introducer comprising a hub and a sheath, the sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath, and the joined hub and sheath having a length, wherein the length of the elongate member is between approximately 3 mm and 10
15 mm longer than the length of the hub and sheath and the stop abuts the proximal end of the introducer when the catheter is sufficiently positioned within the introducer, thereby causing the elongate member to become stretched.
35. The catheterization kit of claim 34, wherein the tubular body includes an inner lumen,
20 an outer surface, and a pair of openings passing between the outer surface and the inner lumen and the coupling of the elongate member to the distal region of the tubular body comprises the elongate member passing through the pair of openings.
36. The catheterization kit of claim 35, wherein the elongate member passes between the
25 stop and the pair of openings along the outer surface of the tubular body.
37. The catheterization kit of claim 35, wherein the tubular body includes a second pair of openings passing between the outer surface and the inner lumen and positioned proximal to the first pair of openings, and
30 the elongate member passes between the first pair of openings and the second pair of openings along the outer surface and between the second pair of openings and the stop along at least a portion of the inner lumen.
38. The catheterization kit of claim 37, wherein the tubular body includes a third pair of openings passing between the outer surface and the inner lumen and positioned
35 proximal of the second pair of openings, and the elongate member passes between the third pair of openings and the stop along the outer surface.

39. The catheterization kit of claim 34, wherein the tubular body includes a loop positioned distal of the coupling of the elongate member to the distal region of the tubular body.
- 5 40. The catheterization kit of claim 34, wherein the elongate member comprises a single length of a thread passing between the distal region of the catheter and the stop.
41. The catheterization kit of claim 34, wherein the distal region of the tubular body defines at least a first stiffness over a substantial portion thereof and the proximal region of the tubular body defines at least a second stiffness over a substantial portion thereof, which second stiffness is less than the first stiffness.
- 10 42. The catheterization kit of claim 41, wherein the tubular body defines at least the first stiffness from a distal end thereof to the proximal region defining the second stiffness.
43. The catheterization kit of claim 34, wherein the introducer has a length that is approximately the same as a length of the elongate member extending between the attachment of the elongate member to the stop and the coupling of the elongate member to the distal region of the tubular body.
- 15 44. The catheterization kit of claim 34, wherein the stop is securable proximally of the introducer for stretching the elongate member.
45. The catheterization kit of claim 44, wherein the elongate member is securable by a fastening means provided on the proximal end of the introducer.
- 20 46. The catheterization kit of claim 45, wherein the fastening means comprises a clamping device.
47. The catheterization kit of claim 45, wherein the clamping device comprises a slot in which the elongate member is securable in a press fit.
- 25 48. The catheterization kit of claim 34, wherein the stop comprises a ring provided on the catheter.
49. The catheterization kit of claim 34, wherein the elongate member extends from the point where it is coupled to the catheter and along the outer surface of the catheter.
- 30 50. The catheterization kit of claim 45, wherein the fastening means comprises a slit in which the elongate member is securable by frictional engagement.

51. The catheterization kit of claim 34, wherein the elongate member is coupled to the catheter at a finite distance from the distal tip of the catheter.
52. The catheterization kit of claim 34, further comprising a needle having an inner lumen.
- 5 53. The catheterization kit of claim 52, further comprising a guide wire configured to fit within the inner lumen of the needle.
54. The catheterization kit of claim 53, further comprising a dilator having an inner lumen configured to pass over the guide wire.
55. The catheterization kit of claim 54, wherein the dilator includes a radiopaque section
10 positioned such that it is located at the distal end of the sheath of the introducer when the dilator is positioned within the introducer.
56. The catheterization kit of claim 34, further comprising a guiding pin configured to fit within the tubular body.
- 15 57. A method of forming a loop in a distal end of a catheter, the method comprising: pulling a ring encircling at least a portion of the circumference of the catheter, wherein the ring is attached to a proximal end of an elongate member, a distal end of the elongate member is attached to a distal end of the catheter, and the elongate member is at least partially positioned along the outside surface of the catheter.
- 20 58. A method of securing a catheter in a body cavity, the method comprising: inserting an introducer into a body cavity, the introducer comprising a hub and a sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath; and
25 inserting a catheter into the introducer, the catheter comprising a hub, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region and a proximal region, the hub being attached to the proximal region of the tubular body, the elongate member having a proximal end and a distal end, the
30 distal end of the elongate member being mounted to the tubular body in the distal region, the proximal end of the elongate member being attached to the ring member, and the elongate member at least partially passing along the outside surface of the catheter between the ring member and the distal region of the tubular body;

advancing the catheter into the introducer until the catheter hub is adjacent to the introducer hub; and

attaching the catheter hub to the introducer hub,

wherein advancing the catheter into the introducer causes the ring member to

5 contact the introducer hub and form a loop in the distal region of the tubular body.

59. A method of forming a loop in a distal end of a catheter, the method comprising:

10 inserting an introducer into a body cavity, the introducer comprising a hub and a sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath, and the joined hub and sheath having a length;

15 inserting a catheter into the introducer, the catheter comprising a hub, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region, the elongate member having a length, a proximal end and a distal end, the distal end of the elongate member being mounted to the distal region of the tubular body and the proximal end of the elongate member being attached to the ring member; and

advancing the catheter into the introducer until the ring member is adjacent to the introducer hub;

20 advancing the catheter into the introducer until the catheter hub is adjacent to the ring member,

wherein advancing the catheter into the introducer until the catheter hub is adjacent to the ring member causes the ring member to contact the introducer hub and form a loop in the distal region of the tubular body.

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60. The method of forming a loop of claim 59, wherein the length of the elongate member is between approximately 1 mm and 10 mm longer than the length of the hub and sheath.

30 61. A method for changing drainage catheters in a body cavity, the method comprising:

inserting an introducer into a body cavity, the introducer comprising a hub and a sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath; and

35 Inserting a first drainage catheter into the introducer, the first drainage catheter comprising a hub, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region and a proximal region, the hub being attached to the proximal region of the tubular body, the elongate member having a proximal

end and a distal end, the distal end of the elongate member being mounted to the tubular body in the distal region, the proximal end of the elongate member being attached to the ring member, and the elongate member passing at least partially along the outside surface of the first drainage catheter between the ring member and the distal region of the tubular body;

advancing the first drainage catheter into the introducer until the catheter hub is adjacent to the introducer hub and a loop is formed in the body cavity by the distal region of the first drainage catheter;

removably connecting the catheter hub to the introducer hub;

using the first drainage catheter to drain fluids from the body cavity;

disconnecting the catheter hub from the introducer hub;

withdrawing the first drainage catheter from the introducer while leaving the introducer within the body cavity; and

inserting a second drainage catheter into the introducer.

62. A method of drawing an internal body cavity, the method comprising:

inserting an introducer into a body cavity, the introducer comprising a hub and a sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath; and

inserting a first drainage catheter into the introducer, the first drainage catheter comprising a hub, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region and a proximal region, the hub being attached to the proximal region of the tubular body, the elongate member having a proximal end and a distal end, the distal end of the elongate member being mounted to the tubular body in the distal region, the proximal end of the elongate member being attached to the ring member, and the elongate member passing at least partially along the outside surface of the first drainage catheter between the ring member and the distal region of the tubular body;

advancing the first drainage catheter into the introducer until the catheter hub is adjacent to the introducer hub and a loop is formed in the body cavity by the distal region of the first drainage catheter;

removably connecting the catheter hub to the introducer hub; and

using the first drainage catheter to drain fluids from the body cavity.

63. A method of drawing an internal body cavity of claim 62, further comprising

disconnecting the catheter hub from the introducer hub;

withdrawing the first drainage catheter; and

inserting a second drainage catheter into the introducer.

64. A method of simultaneously drawing a first and a second internal body cavity, the method comprising:

5 inserting an introducer into a body cavity, the introducer comprising a hub and a sheath having a longitudinal channel passing between a proximal end and a distal end, the hub having a longitudinal channel and being joined to the proximal end of the sheath; and

10 inserting a first drainage catheter into the introducer, the first drainage catheter comprising a hub, a tubular body, at least one elongate member and a ring member, the tubular body having a distal region and a proximal region, the hub being attached to the proximal region of the tubular body, the elongate member having a proximal end and a distal end, the distal end of the elongate member being mounted to the tubular body in the distal region, the proximal end of the elongate member being attached to the ring member, the elongate member passing at least partially along the outside surface of the first drainage catheter between the ring member and the distal region of the tubular body, and the tubular body including a first loop positioned distal of the coupling of the elongate member to the distal region of the tubular body; advancing the first drainage catheter into the introducer until the catheter hub is adjacent to the introducer hub and the first loop is positioned within the first body cavity and a second loop is formed in the second body cavity by a part of the distal region of the first drainage catheter ;

20 removably connecting the catheter hub to the introducer hub; and using the first drainage catheter to drain fluids from the first and the second body cavity.

65. A method of drawing a first and a second internal body cavity of claim 58, further comprising
- disconnecting the catheter hub from the introducer hub;
- withdrawing the first drainage catheter; and
- inserting a second drainage catheter into the introducer.